

U.S. Patent Application Serial No. 09/960,401  
Amendment filed January 31, 2005  
Reply to OA dated November 1, 2004

**REMARKS:**

Claims 1-3 and 9-22 are currently being considered, of which claim 1 has been amended and claims 19-22 have been newly added. Claims 4-8 have been canceled without prejudice or disclaimer of their subject matter. Applicant believes that no new matter has been introduced.

Before turning to the cited art, a brief review of the present invention is in order. The present invention relates to a method of producing a color filter, comprising: forming pixels on a transparent substrate using a colored composition containing (a) an amino resin having a carboxyl group and/or a phenolic hydroxyl group, (b) a pigment, (c) an organic solvent, and (d) a compound having a photopolymerizable functional group, which is a polyfunctional (meth)acrylate and/or a polyfunctional maleimide, by an ink-jet printing method; photocuring the pixels; and then heat-curing the photocured pixels.

In the Office Action mailed November 1, 1004, the Examiner sets forth the following rejections of claims 1-18:

- (1) Claims 1, 2, 4-6, 13-15, and 18 stand rejected under 35 USC 103(a) as obvious over USP 6,277,529 (**Marumoto**) in view of USP 6,048,924 (**Obayashi**);
- (2) Claims 3 and 7 stand rejected under 35 USC 103(a) as obvious over **Marumoto** in view of **Obayashi** and USP 5,055,113 (**Larson**);

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- (3) Claim 8 stands rejected under 35 USC 103(a) as obvious over **Marumoto** in view of **Obayashi**, in further view of either USP 5,821,277 (**Hirayama**) or USP 5,821,016 (**Satoh**), and in view of USP 5,552,192 (**Kashiwazaki '192**);
- (4) Claim 9 stands rejected under 35 USC 103(a) as obvious over **Marumoto** in view of **Obayashi**, in further view of either USP 6,084,006 (**Kashiwazaki '006**) or USP 5,871,872 (**Matijevic**);
- (5) Claims 10 and 11 stand rejected under 35 USC 103(a) as obvious over **Marumoto** in view of **Obayashi**, in further view of either USP 6,224,205 (**Akahira**) or **Matijevic**;
- (6) Claims 12, 16, and 17 stand rejected under 35 USC 103(a) as obvious over **Marumoto** in view of **Obayashi**, in further view of USP 6,203,604 (**Kashiwazaki '604**); and
- (7) Claim 18 stands rejected under 35 USC 103(a) as obvious over **Marumoto** in view of **Obayashi**, in further view of **Kashiwazaki '006**.

Applicants respectfully traverse the above rejections of claims 1-18.

The claim 1 of the present invention has been amended as described above. That is, in the method for producing a color filter of the present invention, a color filter, which has pixels which are excellent in heat-resistance and solvent resistance, can be obtained by printing pixels on a transparent substrate using a colored composition containing (a) an amino resin having a carboxyl group and/or a phenolic hydroxyl group, (d) a compound having a photopolymerizable functional group, which is a polyfunctional (meth)acrylate and/or a polyfunctional maleimide and

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the like as described above, as components, by an ink-jet printing; photocuring the pixels; and then heat-curing the photocured pixels.

However, **Obayashi** does not include a description regarding the printing by an ink-jet system and does not include a description regarding the photocuring.

The Examiner has suggested (see pp. 6 and 9 in the previous Office Action mailed August, 29, 2003) that a photopolymerization is possible by adding a photopolymerization initiator to the composition of **Obayashi**, since the aqueous resin composition of **Obayashi** contains polymerizable compounds, such as 2-hydroxy ethyl (meth)acrylate (2-HEMA).

However, the above reasoning by the Examiner seems to include some misunderstanding. That is, an aqueous acrylic resin, which is obtained by a copolymerization using monomers such as 2-hydroxy ethyl (meth)acrylate (2-HEMA) as a raw material, is comprised in the aqueous resin composition of **Obayashi**. That is, polymerizable groups of the monomers such as 2-hydroxy ethyl (meth)acrylate are lost by the aforementioned copolymerization, and therefore, occurrence of photocuring is not expected, even if a photopolymerization initiator is added to the composition of **Obayashi**.

Furthermore, **Obayashi** does not include the descriptions regarding the (d) compound, which is a polyfunctional (meth)acrylate and/or a polyfunctional maleimide and is the constituent component of the colored composition of the present invention. Accordingly, it is clear that the aqueous resin composition of **Obayashi** is different from the colored composition of the present invention.

Moreover, the aforementioned polyfunctional (meth)acrylate and polyfunctional maleimide of the (d) compound has hydrophobic properties, in general. Therefore, a person skilled in the art would easily suppose that, if the polyfunctional (meth)acrylate and polyfunctional maleimide, which are hydrophobic materials, are added to the aqueous resin composition of **Obayashi**, the aqueous resin composition of **Obayashi** causes unsuitable separation between components and the like, resulting in poor storage stability. We believe that, even a person skilled in the art could not have conceived easily that the polyfunctional (meth)acrylate and polyfunctional maleimide, which are hydrophobic materials, are added into the aqueous resin composition of **Obayashi**.

**Marumoto** also does not disclose the (a) component and the (d) component of the present invention.

Also, neither **Marumoto** nor **Obayashi** suggest combining **Marumoto** and **Obayashi** in the manner proposed by the Examiner. Furthermore, even if the teachings of **Obayashi** and **Marumoto** were to be combined, it would be very difficult to achieve the present invention even by a person skilled in the art, since the configuration of the present invention and the configuration of **Obayashi** are distinctly different from each other, as described above.

Even if the teachings of **Obayashi** and **Marumoto** were to be combined in the manner suggested by the Examiner, a person of ordinary skill in the art would not arrive at the invention set forth in claim 1, as amended.

**Marumoto** and **Obayashi**, alone or in combination, fail to describe, teach, or suggest the following features of claim 1, as amended: “forming pixels on a transparent substrate using a colored composition containing (a) an amino resin having a carboxyl group and/or a phenolic hydroxyl group, (b) a pigment, (c) an organic solvent, and (d) a compound having a photopolymerizable functional group, which is a polyfunctional (meth)acrylate and/or a polyfunctional maleimide, by an ink-jet printing method; photocuring the pixels; and then heat-curing the photocured pixels”, in combination with the other claimed features.

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**Larson, Hirayama, Satoh, Kashiwazaki '192, Kashiwazaki '006, Matijevic, Akahira, and Kashiwazaki '604** fail to remedy the above-described deficiencies of **Marumoto** and **Obayashi** regarding claim 1, as amended.

**Marumoto, Obayashi, Larson, Hirayama, Satoh, Kashiwazaki '192, Kashiwazaki '006, Matijevic, Akahira, and Kashiwazaki '604**, alone or in combination, fail to describe, teach, or suggest the following features of claim 1, as amended: “forming pixels on a transparent substrate using a colored composition containing (a) an amino resin having a carboxyl group and/or a phenolic hydroxyl group, (b) a pigment, (c) an organic solvent, and (d) a compound having a photopolymerizable functional group, which is a polyfunctional (meth)acrylate and/or a polyfunctional maleimide, by an ink-jet printing method; photocuring the pixels; and then heat-curing the photocured pixels”, in combination with the other claimed features.

In view of the aforementioned amendments and accompanying remarks, all claims currently being considered are in condition for allowance, which action, at an early date, is requested.

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If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the Applicant's undersigned attorney at the telephone number indicated below to arrange for an Interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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